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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/879,491	06/12/2001	Frederick D. Busche	RSW920000174US1	5033

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EXAMINER	
LASTRA, DANIEL	

ART UNIT	PAPER NUMBER
3622	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/879,491	BUSCHE, FREDERICK D.	
	Examiner	Art Unit	
	DANIEL LASTRA	3622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 January 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8,10-22,24-35 and 37-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,10-22,24-35 and 37-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-8, 10-22, 24-35 and 37-43 have been examined. Application 09/879,491 has a filing date 06/12/2001.

Response to Appeal Brief

2. In response to Final Office Action dated 09/06/2006, the Applicant filed an Appeal Brief. In view of the Appeal Brief filed on 01/17/2007, PROSECUTION IS HEREBY REOPENED.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-8, 10-22, 24-35 and 37-43 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The basis of this rejection is set forth whether the invention produces a useful, concrete, and tangible result.

Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) that do not apply, involve, use, or advance the technological arts fail to promote the "progress of science and the useful arts" (i.e., the physical sciences as opposed to social sciences, for example) and therefore are found to be non-statutory subject matter. For a process claim to pass muster, the recited process must somehow apply, involve, use, or advance the technological arts.

Mere intended or nominal use of a component, albeit within the technological arts, does not confer statutory subject matter to an otherwise abstract idea if the component does not apply, involve, use, or advance the underlying process.

In the present application, claims 1-8, 10-22, 24-35 and 37-43 do not recite a "concrete and tangible result". Claims 1-8, 10-22, 24-35 and 37-43 recites using a predictive algorithm but do not recite a concrete and tangible result from said using. Also, claims 29 and 43 do not meet the definition of a true data structure (see IEEE definition in MPEP 2106).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 15, 29 and 41-43 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 41-43 recite "using the predictive algorithm to predict customer behavior based on the data network geographical information". Claims 1, 15 and 29 recite "using the modified selection of entries by the predictive algorithm". Applicant's background only explain how to use said predictive algorithm in page 44, lines 13-20 where it recites "the predictive algorithm may then use the training data set and testing data set to train itself and generate customer behavior rules. Thereafter, if a user inputs a request parameters for requesting a prediction of customer behavior, the customer behavior rules will be applied to the input parameters and a customer behavior prediction will be output". Nowhere, in said reciting or anywhere else in Applicant's specification is explained how the predictive algorithm would predict customer behavior based upon network geographic location.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-8, 10-22, 24-35 and 37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Menon et al (U.S. 5,537,488) in view of Wu (US 6,741,967) and further in view of Applicant's background of the Invention.

As per claims 1, 15 and 29, Menon teaches:

A data processing machine implemented method of selecting data sets for use with a predictive algorithm based on data network geographical information, comprising data processing machine implemented steps of:

generating a first statistical distribution of a training data set (see column 20, lines 50-52) ;

generating a second statistical distribution of a testing data set (see column 20, lines 60-63);

using the first statistical distribution and the second statistical distribution to identify a discrepancy between the first statistical distribution and the second statistical distribution (see column 20, lines 61-64);

modifying selection of entries in one or more of the training data set and the testing data set based on the discrepancy between the first statistical distribution and the second statistical distribution (see column 21, lines 20-24)

using the modified selection of entries by the predictive algorithm and that said using is done by comparing at least one of the first statistical distribution and the second statistical distribution to a statistical distribution of a customer database (see col 5, line 35 – col 6, line 56; column 6, line 57 – column 7, line 21; Menon compares input training

data vector to a present cluster of a category of a customer database (*i.e.* photographs and voice data from different persons) and modifies said present cluster of category if said input training data set exceeds a correlation threshold) but fails to teach with respect to the data network geographical information to determine if at least one of the training data set and the testing data set are geographically representative of a customer population represented by the customer database. Applicant's background of the Invention teaches that it is old and well known in the artificial intelligence art to input training and test data into a predictive algorithm for the purpose of predicting a customer's propensity to respond to an offer or his propensity to buy a product (see Applicant's background page 3). Wu teaches a system that determines customer's navigational path through websites or web pages by calculating the amount of Links by task, site and speed of search results in order to predict if an increase in a customer's purchase rate was the result of an improvement in said navigational path (see Wu column 18, table B; col 36, lines 24-30). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the application was made, to know that Menon would use the Wu's navigation data and Applicant's background to define statistical training and test data which would be input into a predictive algorithm in order to predict a customer behavior based upon said customer's links navigation data. Wu's Web product managers would be motivated to use a predictive algorithm to determine how customers access time, number of clicks and other navigational cues influence purchase behavior (see Wu column 24, lines 1-25) in order that said predictive algorithm help said managers increase customers' satisfaction and purchase rate.

As per claims 2, 3, 5, 6, 10, 16, 17, 19, 20, 24, 30, 31, 33, 34 and 37 Menon teaches the method of claim 1, but fails to teach wherein the first statistical distribution and the second statistical distribution are distributions of a number of data network links from a customer data network geographical location to a web site data network geographical location and the size of a click stream to arrive at a web site data network geographical location and a weighted number of data network links between a customer data network geographical location and a web site data network geographical location and frequency distributions of a number of data network links between a customer data network geographical location and one or more web site data network geographical location. Wu teaches a system that determines customer's navigational path through websites or web pages by calculating the amount of Links by task, site and speed of search results in order to predict if an increase in a customer's purchase rate was the result of an improvement in said navigational path (see Wu column 18, table B; col 36, lines 24-30). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the application was made, to know that Menon would use the Wu's navigation data and Applicant's background to define statistical training and test data which would be input into a predictive algorithm in order to predict a customer behavior based upon said customer's links navigation data. Wu's Web product managers would be motivated to use a predictive algorithm to determine how customers access time, number of clicks and other navigational cues influence purchase behavior (see Wu column 24, lines 1-25) in order that said predictive algorithm help said managers increase customers' satisfaction and purchase rate.

As per claims 4, 18 and 32, Menon teaches:

The method of claim 1, wherein comparing the first statistical distribution and the second statistical distribution includes comparing one or more of a mean, mode, and standard deviation of the first statistical distribution to one or more of a mean, mode, and standard deviation of the second statistical distribution (see column 6, line 57 – column 7, line 20).

As per claims 7, 21 and 35, Menon teaches:

The method of claim 1, wherein modifying selection of entries in one or more of the training data set and the testing data set includes generating recommendations for improving selection of entries in one or more of the training data set and the testing data set and wherein the method of claim 1 further comprises re-generating at least one of the first statistical distribution and the second statistical distribution based upon the recommendations (see column 21, lines 20-24).

As per claims 8 and 22, Menon teaches:

The method of claim 1, wherein the training data set and the testing data set are selected from a customer information database (see column 5, lines 37-55) but fails to teach comprising information with respect to customers who have purchased any of goods and services over a data network, wherein the data network geographic information pertains to geographic information of the data network. Wu teaches a system that determines customer's navigational path through websites or web pages by calculating the amount of Links by task, site and speed of search results in order to predict if an increase in a customer's purchase rate was the result of an improvement in

said navigational path (see Wu column 18, table B; col 36, lines 24-30). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the application was made, to know that Menon would use the Wu's navigation data and Applicant's background to define statistical training and test data which would be input into a predictive algorithm in order to predict a customer behavior based upon said customer's links navigation data. Wu's Web product managers would be motivated to use a predictive algorithm to determine how customers access time, number of clicks and other navigational cues influence purchase behavior (see Wu column 24, lines 1-25) in order that said predictive algorithm help said managers increase customers' satisfaction and purchase rate.

As per claims 11, 25 and 38, Menon teaches:

The method of claim 1, wherein comparing at least one of the first statistical distribution and the second statistical distribution to a statistical distribution of a customer database includes:

generating a composite data set from the training data set and the testing data set; and generating a composite statistical distribution from the composite data set that was generated from the training data set and the testing data set (see Menon column 4, lines 1-15).

As per claims 12, 26 and 39, Menon teaches:

The method of claim 1, wherein modifying selection of entries in one or more of the training data set and the testing data set (see column 2, lines 4-20) but fails to teach includes changing one of a random selection algorithm and a seed value for the random

selection algorithm and then re-comparing the first statistical distribution and the second statistical distribution. However, Applicant's background of the Invention teaches that it is old and well known to use random selection procedure to insure that the both the training data and test data sets are representative of the entire data population being evaluated (see Applicant's background page 3). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the application was made, to know that Menon would use the random selection algorithm to create a training and test data that would be input to a predictive algorithm in order to insure a training and test data representative of the entire data population being evaluated, as taught by Applicant's background. Menon would be motivated to re-compare said training and test data in order to improve said data by increasing the probability of obtaining a better representation of said data population due to said re-comparing.

As per claims 13, 27 and 40, Menon teaches:

The method of claim 1, wherein using the modified selection of entries by the predictive algorithm includes training the predictive algorithm using at least one of the training data set and the testing data set if the discrepancy is within a predetermined tolerance (see column 1, lines 30-35).

As per claims 14 and 28, Menon teaches:

The method of claim 13, wherein the predictive algorithm is a discovery based data mining algorithm (see column 1, lines 20-40).

6. Claims 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu (US 6,741,967) in view of Applicant's background of the Invention and further in view of Menon (US 5,537,488).

As per claims 41-43, Wu teaches:

A data processing machine implemented method of predicting customer behavior based on data network geographical influences, comprising data processing machine implemented steps of:

obtaining data network geographical information regarding a plurality of customers (see column 30, column 24, lines 1-25);

the data network geographic information of both (i) number of data network links between a customer geographical location and one or more web site data network geographical locations (see col 18, table B), *and (ii) size of a click stream for arriving at the one or more web site data network geographical locations* (see col 18, table B);

Wu fails to teach that *the data network geographic information comprising frequency distributions* and training a predictive algorithm using the data network geographical information; and using the predictive algorithm to predict customer behavior based on the data network geographical information. However, Applicant's background of the Invention teaches that it is old and well known in the artificial intelligence art to input training and test data into a predictive algorithm for the purpose of predicting a customer's propensity to respond to an offer or his propensity to buy a product (see Applicant's background page 3). Menon teaches using training and test data set, which comprises histogram distributions (see figures 2A-C). Therefore, it

would have been obvious to a person of ordinary skill in the art at the time the application was made, to know that Menon would use the Wu's navigation data and Applicant's background to define statistical training and test data which would be input into a predictive algorithm in order to predict a customer behavior based upon said customer's links navigation data. Wu's Web product managers would be motivated to use a predictive algorithm to determine how customers access time, number of clicks and other navigational cues influence purchase behavior (see Wu column 24, lines 1-25) in order that said predictive algorithm help said managers increase customers' satisfaction and purchase rate.

Response to Arguments

7. Prosecution is hereby reopened in order to resolve the issue about the prematureness of the final rejection filed 09/06/2006, where the Applicant argues that the claims were improperly rejected, as the Final Rejection filed 09/06/06 was premature. The Applicant argues that his claimed invention produces a concrete, useful and tangible result. The Examiner answers that Applicant's claimed invention recites using a predictive algorithm but do not recite a concrete and tangible result from said using. Applicant's claims are simply generating and modifying data sets without any concrete and tangible from said modifying.

The Applicant argues that the Applicant's specification has support for the limitation "using the predictive algorithm to predict customer behavior based on the data network geographical information". The Examiner answers that Applicant's specification only discloses inputting data sets into a predictive algorithm but does not describe or teach

anything else. Applicant's specification does not teach how the predictive algorithm predicts customer behavior based on the data network geographical information.

The Applicant argues that none of the references make any mention of using data network geographic information to modify entries of the testing or training data sets that are used by a predictive algorithm. The Examiner answers that Applicant's background of the Invention teaches that it is old and well known in the artificial intelligence art to input training and test data into a predictive algorithm for the purpose of predicting a customer's propensity to respond to an offer or his propensity to buy a product (see Applicant's background page 3). Wu teaches a system that determines customer's navigational path through websites or web pages by calculating the amount of Links by task, site and speed of search results in order to predict if an increase in a customer's purchase rate was the result of an improvement in said navigational path (see Wu column 18, table B; col 36, lines 24-30). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the application was made, to know that Menon would use the Wu's navigation data and Applicant's background to define statistical training and test data which would be input into a predictive algorithm in order to predict a customer behavior based upon said customer's links navigation data. Wu's Web product managers would be motivated to use a predictive algorithm to determine how customers access time, number of clicks and other navigational cues influence purchase behavior (see Wu column 24, lines 1-25) in order that said predictive algorithm help said managers increase customers' satisfaction and purchase rate.

The Applicant argues that Menon does not teach comparing at least one of the first statistical distribution and the second distribution to a distribution of a customer database. The Examiner answers that Menon compares input training data vector to a present cluster of a category of a customer database (*i.e.* photographs and voice data from different persons) and modifies said present cluster of category if said input training data set exceeds a correlation threshold. Therefore, contrary to Applicant's argument, Menon compares at least one statistical distribution (*i.e.* training vector) to a cluster category customer database (i.e. photographs and voice data of different persons).

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL LASTRA whose telephone number is 571-272-6720 and fax 571-273-6720. The examiner can normally be reached on 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ERIC W. STAMBER can be reached on 571-272-6724. The official Fax number is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel Lastra
May 19, 2007

RAQUEL ALVAREZ
PRIMARY EXAMINER